



				M	ECHANICAL SYM	BOL LEGEN	ID				
SYMBOL	ABBREV.	DESCRIPTION	<u>SYMBOL</u>	ABBREV.	DESCRIPTION	SYMBOL	ABBREV.	DESCRIPTION	SYMBOL	ABBREV.	DESCRIPTION
\	SA	SUPPLY AIR DUCT (UP)	w	W	SOIL OR WASTE ABOVE GROUND	cs	CS	CONDENSER WATER SUPPLY	——FOD——	FOD	FUEL OIL DISCHARGE
\	EA/RA	EXHAUST/RETURN AIR DUCT (UP)	— — WB — —	WB	SOIL OR WASTE BELOW GROUND	— — CR — —	CR	CONDENSER WATER RETURN	FOR	FOR	FUEL OIL RETURN
	SA	SUPPLY AIR DUCT (DOWN)	v	V	VENT PIPING	CWS	CWS	CHILLED WATER SUPPLY	——FOS——	FOS	FUEL OIL SUCTION
- 12	EA/RA	EXHAUST/RETURN AIR DUCT (DOWN)		SCW	DOMESTIC SOFT COLD WATER	— —CWR— —	CWR	CHILLED WATER RETURN	——FOV——	FOV	FUEL OIL TANK VENT
	2000	ELBOW WITH TURNING VANES	cw	CW	DOMESTIC COLD WALTER	——HWS——	HWS	HEATING WATER SUPPLY	—— REF ——	REF	REFRIGERANT
			— HW —	HW	DOMESTIC HOT WATER	— —HWR— —	HWR	HEATING WATER RETURN	—— REFD——	REFD	REFRIGERANT DISCHARGE
<u>} </u>		COUPLING		RHW	DOMESTIC RECIRCULATING HOT WATER	— —HWRR— —	HWRR	HEATING WATER RETURN REVERSE	RHG	RHG	REFRIGERANT HOT GAS
<u>}</u>		SOUND ATTENUATOR	TW	TW	TEMPERED WATER	——GHS——	GHS	GLYCOL HOT WATER SUPPLY	—— RL ——	RL	REFRIGERANT LIQUID
L 	VAV	VAV DOVEC	CD	CD	CONDENSATE DRAIN	— —GHR— —	GHR	GLYCOL HOT WATER RETURN	—— RS ——	RS	REFRIGERANT SUCTION
	VAV	VAV BOXES	—— LA ——	LA	LAB AIR	—— LPS ——	LPS	LOW PRESSURE STEAM SUPPLY (0-15 PSI)	— F —	F	FIRE LINE
		SUPPLY DIFFUSER	—— DE ——	DE	DEIONIZED WATER	— — LPR— —	LPR	LOW PRESSURE STEAM RETURN	DF	DF	DRY FIRE SPRINKLER
<u> </u>		DETUDU DIFFIRM	DI	DI	DISTILLED WATER		MPS	MEDIUM PRESSURE STEAM SUPPLY (15 TO 60 PSI)	——GTS——	GTS	GEOTHERMAL SUPPLY
		RETURN DIFFUSER	LG	LG	LAB GAS	— —MPR— —	MPR	MEDIUM PRESSURE STEAM RETURN	— — GTR— —	GTR	GEOTHERMAL RETURN
0		RADIANT PANEL	LV	LV	LAB VACUUM	——HPS——	HPS	HIGH PRESSURE STEAM SUPPLY (60 PSI & ABOVE)			
	PRV		—— AW ——	AW	ACID WASTE ABOVE GRADE	— — HPR— —	HPR	HIGH PRESSURE STEAM RETURN	•		
	PRV	POWER ROOF VENTILATOR	— — AWB — —	AWB	ACID WASTE BELOW GRADE	1		0 NA 0 SA		$+$ \wedge	Ψ
7 7	CUH	UNIT HEATERS	AV	AV	ACID VENT PIPING	1	1 2	3 4 5 6	7 8 9	10 11	 12
	COIT	VIII IILAILIN	—— MA ——	MA	MEDICAL AIR			~ ►	F	s	
			CO2	CO2	CARBON DIOXIDE		$\overline{}$	<u> </u>	-\[\frac{1}{2}\-\]	<u> </u>	
Φ	Φ	ŶN NIGHT	—— MGAS ——	MGAS	MEDICAL GAS	13 14	15 16	18 19 20	21 22 2	3 24 25	5 26
HUMIDISTAT	THERMOSTAT	THERMOSTAT A.P. I	—— н ——	Н	HYDROGEN	+	· FM				
Θ	→ FIN TUBE RADIATION		NI	NI	NITROGEN	27 28 [°]	29 3	0 31 32			
			NO	NO	NITROUS OXIDE	1. SIDE CO 2. ELBOW	ONNECTION ON DOWN	12. THERMOMETER 13. PIPE ANCHOR	23. FLOW S 24. PRESSU	WITCH IRE TEMPERAT	JRF TAP
REG GRILLES & DIFFUSERS		TYPE-NECK-CFM	o	0	OXYGEN	3. ELBOW 4. SHUT C	'UP	14. PIPE GUIDE 15. CONCENTRIC REDUCE	25. MANUAI		BALANCING VALVE
	(3X)		RO	RO	REVERSE OSMOSIS	5. BALANCING VALVE 16. ECCENTRIC REDUCER 27. MEDICAL GAS OUTLET 6. CONTROL VALVE 17. STRAINER 28. HOSE-BIBB OR WALL HYDRANT					
TOTAL (IF EXCEED 1)		MV	MV	MEDICAL VACUUM	7. PRESSURE REDUCING VALVE 18. UNION 29. INSERTION FLOW METER 8. PRESSURE RELIEF VALVE 19. DIRECTION OF FLOW 30. FLOW METER						
	, r	2-12x12-150	G	G	NATURAL GAS	9. CHECK 10. AIR VE	ENT	20. PITCH PIPE DOWN 21. 3-WAY CONTROL VALV			BACKFLOW PREVENTER
VOLUME DAMPER	/ ك		—— G-2LB ——	G-2LB	NATURAL GAS - 2LB	11. PRESS	SURE GAUGE	22. PUMP			
RETURN AIR GRILLE		PRO	PRO	PROCESS	© DOOE DEATH	C.O.		یے ج	⊢ ⊲		
DAMPERS	OTORIZED	COMBINATION SMOKE SMOKE & FIRE . [S] . [C]	RD	RD	ROOF DRAIN PIPING	_	ELEAN OUT FLO	OOR DRAIN WATER METER GAS METER	W.C.O. \$	DOWNSPOUT PIPE BREAK	NOZZLE
<u></u>	<u> </u>	<u>, </u>	— RDB — —	RDB	ROOF DRAIN PIPING BELOW GRADE	FLOOR SINK	VENT		CLEANOUT	END CAP	
f	VD [i i i i f F B	ORD	ORD	OVERFLOW DRAIN PIPING	^>	STACK I		•	STEAM TRAP	
	VOLUME FII DAMPER	RE BACKDRAFT	— — ORDB — —	ORDB	OVERFLOW DRAIN PIPING BELOW GRADE	>	6	EXPANSION TANK	_	► BACK FLOW F	
						FIRE DEPT. CONNEC		DADIATION SUBSTILL	DICED NO		
						S STEAM 1 RISER I		RADIATION P1 PLUMBING P-601 SHEET DES	SIGNATOR	ASE MOUNT PUMP	
								-			

GENERAL MECHANICAL NOTES

- ALL SERVICES, EQUIPMENT, ETC., SHOWN ON PLANS ARE NEW AND SHALL BE FURNISHED UNDER THIS CONTRACTOR UNLESS OTHERWISE INDICATED. IN GENERAL, ALL PIPING AND DUCTWORK SHALL BE RUN CONCEALED**SN**SPENDED CEILING SPACES AND IN SHAFTS PROVIDED UNLESS NOTED OR OTHERWISE INDICATED. CERTAIN ROOMS HAVE NO SUSPENDED CEILINGS, AND PIPING AND DUCTWORK IN THESE ROOMS IS TO BE EXPOSED.
- ALL PIPING AND DUCTWORK IS INTENDED TO BE CONCEALED IN WALLS AND PARTITIONS UNLESS SPECIFICALLY NOTED OTHERWISE. SOME ITEMS MAY APPEAR NOT TO BE CONCEALED DUE TO DIGITAL REGISTRATION ANIALIGNMENT ISSUES ASSOCIATED WITH THE DUPLICATION PROCESS.
- COOPERATE WITH THE OTHER TRADES TO AVOID ANY CONFLICTS BETWEEN PIPING, DUCTWORK, ELECTRICAL WORK, ETC.
- ALL DETAILS, SCHEMATICS, DIAGRAMS, ETC., DESIGNATE GENERAL ARRANGEMENT ONLY.
- FOR DETAILS, EQUIPMENT CONNECTIONS, AND PIPE SIZES NOT SHOWN ON FLOOR PLANS, REFER TO ELEVATIONS, DETAILS, RISERS AND SCHEDULES. THIS CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES AND/OR OPENINGS WHERE REQUIRED TO RUN PIPES AND DUCTS THROUGH FOUNDATIONS. FLOOR
- CONSULT REFLECTED CEILING PLAN FOR EXACT LOCATION OF SPRINKLER HEADS, GRILLES, REGISTERS, AND DIFFUSERS.
- CEILING ACCESS IS REQUIRED AT ALL REHEAT COILS, VALVES, FIRE DAMPERS, MANUAL AND MOTORIZED DAMPERS LOCATED ABOVE CEILING. CEILING ACCESS PANELS WILL BE PROVIDED UNDER THE GENERAL SECTION OF CONSTRUCTION AND SHALL BE MINIMUM OF 24" X 24" UNLESS OTHERWISE INDICATED. COORDINATE WITH GENERAL

SLABS, WALLS, BRIDGING AND BEAMS EXCEPT WHERE OTHERWISE INDICATED.

- THERMOSTATS LOCATED AT OUTSIDE WALLS SHALL BE MOUNTED ON INSULATED BACKING TO MINIMIZE WALL EFFECT.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- WHERE NEW SERVICES ARE SHOWN CONNECTING TO EXISTING, VERIFY EXACT LOCATION AND SIZE OF EXISTING.
- 13. ALL EXISTING SERVICES SHALL BE MAINTAINED UNLESS OTHERWISE INDICATED. ALL DUCTS, PIPING, FIXTURES, ETC., WHICH ARE DASHED AND/OR INDICATED BY NOTE ON DEMOLITION PLANS SHALL BE REMOVED.
- ALL PLUMBING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL CODES.
- PIPE RUNOUT SIZES TO REHEAT COILS TO BE 3/4" UNLESS OTHERWISE NOTED.
- 17. ALL RECIRCULATING HOT WATER, OXYGEN, VACUUM, AIR, AND GAS SHALL BE 1/2"
- 18. REFER TO THE SPECIFICATIONS FOR SIZING OF STEAM TRAPS. 19. REFER TO THE SPECIFICATIONS FOR SIZING OF CONTROL VALVES.
- 20. ALL PLUMBING FIXTURES WHICH ARE SHOWN AND DO NOT HAVE "P" NUMBERS ARE
- EXISTING AND SHALL REMAIN UNLESS OTHERWISE INDICATED. 21. ALL WALL HYDRANTS ARE TO BE MOUNTED AT 24" ABOVE GRADE.
- 22. DIFFUSERS IN ROOMS WITHOUT FINISHED CEILINGS SHALL BE INSTALLED SO THAT THE BOTTOM OF THE DIFFUSER IS 9'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE
- 23. VERIFY ALL DUCT CONNECTIONS SIZES TO POWER ROOF VENTILATORS. 24. WHERE SHEET METAL HOUSING, PLENUMS AND DUCTWORK ARE FASTENED TO GENERAL CONSTRUCTION. TAKE SPECIAL CARE TO MAKE AN AIRTIGHT SEAL AT THIS
- 25. ALL FLEXIBLE DUCTWORK AND CONNECTIONS BETWEEN THE MEDIUM PRESSURE DUCTWORK AND THE VAV BOXES SHALL BE THE SIZE OF THE BOX INLET.
- 26. ALL FLEXIBLE DUCTWORK AND CONNECTIONS BETWEEN THE LOW PRESSURE DUCTWORK AND THE DIFFUSERS SHALL BE THE SIZE OF THE DIFFUSER INLET. CONNECTION TO THE LP DUCT SHALL BE MADE THROUGH A CONNECTOR DAMPER
- 27. FOR FLEXIBLE DUCTWORK CONNECTIONS A NYLON DUCT STRAP SHALL BE USED. DUCT TAPE ONLY WILL NOT BE ALLOWED.
- 28. BUTTER AND SEAL ALL SHEET METAL DUCTWORK JOINTS.

PROPERLY FIRE SEALED.

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- 29. WHERE MATERIAL IS INDICATED TO BE REMOVED, IT SHALL REMAIN THE PROPERTY OF THE OWNER. THIS CONTRACTOR SHALL DISPOSE OF MATERIAL AS DIRECTED BY THE
- 30. ALL BALANCING OF AIR AND HYDRONIC SYSTEMS SHALL BE PERFORMED BY AN NEBB OR AABC CERTIFIED TEST AND BALANCE AGENCY. 31. ALL PIPE PENETRATIONS OF RATED WALLS AND FLOORS SHALL BE SLEEVED AND
- 32. ALL PIPE AND DUCT PENETRATIONS OF SMOKE PARTITION WALLS SHALL BE PROPERLY SEALED TO RESIST THE PASSAGE OF SMOKE AS REQUIRED BY THE LOCAL AUTHORITY.

SCHEDULES) BY THE PLUMBING CONTRACTOR. PLUMBING CONTRACTOR SHALL BE

- 33. INSTALL FLUSH VALVES AND OR LEVERS ON WIDE SIDE OF HANDICAPPED STALLS. 34. THE HEATING AND/OR COOLING HYDRONIC SYSTEM SHALL BE PROVIDED AND FILLED WITH A 30% PROPYLENE GLYCOL SOLUTION (OR AS INDICATED ON THE EQUIPMENT
- RESPONSIBLE FOR DETERMINING THE AMOUNT OF GLYCOL REQUIRED. MECHANICAL CONTRACTOR SHALL PROVIDE BALANCING DAMPER WHERE INDICATED. IN ADDITION CONTRACTOR SHALL PROVIDE LOCKABLE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY. THE BALANCING DAMPER SHALL BE LOCATED IN THE DUCT IMMEDIATELY
- AFTER THE DUCT TAKE-OFF AT THE MAIN DUCT CONNECTION. 36. SEE SPECIFICATIONS FOR DUCT INSULATION AND LINER REQUIREMENTS.
- KEEP EXIST. SERVICES OPERATIONAL TO ALL AREAS OF THE BUILDING NOT IN THE CONSTRUCTION AREA.
- 38. SEE PHASING PLANS ON THE "G" SHEETS FOR TIMING AND COORDINATION OF WORK.

GENERAL DEMOLITION NOTES

- WHERE EQUIPMENT AND/OR FIXTURES ARE INDICATED TO BE REMOVED, THE EXISTING SERVICES SHALL BE CAPPED AND CONCEALED. ALL ABANDONED BRANCH SERVICES WHICH SERVE ABOVE EQUIPMENT, ETC., SHALL BE REMOVED BACK TO THE MAINS AND CAPPED, UNLESS OTHERWISE INDICATED. 2. CAP ANY REMAINING PIPE AND/OR DUCT OPENINGS.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING AND PAINTING TO MATCH EXISTING WALLS, FLOORS, AND CEILINGS.

4. ALL HYDRONIC AND DOMESTIC PIPING SHALL BE PROPERLY AND THOROUGHLY

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FULLY SPRINKLERED 100% CONSTRUCTION DOCUMENTS

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MECHANICAL SYMBOLS, ABBREVIATIONS, AND **GENERAL NOTES** Approved: Project Director

Project Title 04100857 **Sioux Falls VA Health Care System** Acute Inpatient Medical Unit Addition and Renovation Location VA Medical Center 2501 W. 22nd Street, PO Box 5046 Sioux Falls, SD 57117-5046 **BSW** 08/06/2012

Office of Construction and Facilities Management

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VA FORM 08-6231

REVISION DESCRIPTION

DATE